

U.S. Application No. 09/920,376
Reply to Office Action dated August 23, 2005

PATENT
450100-03439

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1. (Currently Amended) An authenticating method for portable radio devices, comprising data communicating means for performing radio communication over a first coverage area and authorizing means for performing authentication of said portable radio devices over a second coverage area, comprising the steps of:

switching coverage area of two or more of said portable radio devices to be mutually authenticated from the first coverage area to the second coverage area, the second coverage area being smaller than the first coverage area;

the two or more portable radio devices to be mutually authenticated having the second coverage area being brought ~~with in~~ within proximity ~~to~~ of one another so that the coverage areas overlap;

performing mutual authentication between two or more portable radio devices by said authenticating means automatically when the coverage area of the two or more portable radio devices overlap ~~or after confirmation by users of said portable radio devices~~; and

preventing communication with an unintentional portable radio device by narrowing the coverage area of ~~both~~ the two or more portable radio devices to be mutually authenticated before authentication initiates based on the proximity of the two or more portable radio devices; and

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specifying other devices to be mutually authenticated when the two or more portable radio devices are within a predetermined range of each other over said second coverage area.

2. (Currently Amended) The authenticating method for the portable radio devices according to Claim 1, wherein the step of performing the authentication by said authenticating means is performed in a state where a transmission output of said portable radio devices is reduced to shorten a communication distance of said portable radio devices.

3. (Currently Amended) The authenticating method for the portable radio devices according to Claim 2, wherein the transmission output is reduced only in a particular one of said portable radio devices.

4. (Currently Amended) The authenticating method for the portable radio devices according to Claim 2, wherein the transmission output is reduced upon turning-on of an authentication button provided on said particular one of said portable radio devices.

5. (Currently Amended) The authenticating method for the portable radio devices according to Claim 1, wherein the step of performing the authentication by said authenticating means is performed in a state where reception sensitivity of said portable radio devices is reduced to shorten a communication distance of said portable radio devices.

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6. (Currently Amended) The authenticating method for the portable radio devices according to Claim 5, wherein the reception sensitivity is reduced only in a particular one of said portable radio devices.

7. (Currently Amended) The authenticating method for the portable radio devices according to Claim 5, wherein the reception sensitivity is reduced upon turning-on of an authentication button provided on said particular one of said portable radio devices.

8. (Canceled)

9. (Currently Amended) A portable radio device comprising:
data communicating means for performing radio communication over a first coverage area and authenticating means for performing authentication over a second coverage area of said portable radio device, and means for switching the coverage area of said portable radio device to be authenticated from said first coverage area to said second coverage area, said second coverage area being smaller than said first coverage area;

said authenticating means of said portable radio device performing, in a condition where a plurality of portable radio devices exist, mutual authentication between two or more portable radio devices automatically ~~or after confirmation by users of said portable radio devices~~ when the two or more portable radio devices are brought in proximity to one another so that the second coverage areas overlap,

wherein communication with an unintentional portable radio device is prevented by narrowing the coverage area of ~~both~~ the two or more portable radio devices to be mutually

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authenticated before authentication initiates based on the proximity of the two or more portable radio devices; and

specifying other devices to be mutually authenticated when the two or more portable radio devices are within a predetermined range of each other over said second coverage area.

10. (Currently Amended) The portable radio device according to Claim 9, wherein said authenticating means performs the authentication in a state where a transmission output of said plurality of portable radio devices is reduced to shorten a communication distance of said portable radio devices.

11. (Currently Amended) The portable radio device according to Claim 10, wherein the transmission output is reduced only in a particular one of said portable radio devices.

12. (Currently Amended) The portable radio device according to Claim 10, wherein the transmission output is reduced upon turning-on of an authentication button provided on said particular one of said portable radio devices.

13. (Currently Amended) The portable radio device according to Claim 9, wherein said authenticating means performs the authentication in a state where reception sensitivity of said portable radio devices is reduced to shorten a communication distance of said portable radio devices.

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14. (Currently Amended) The portable radio device according to Claim 13,
wherein the reception sensitivity is reduced only in a particular one of said portable radio
devices.

15. (Currently Amended) The portable radio device according to Claim 13,
wherein the reception sensitivity is reduced upon turning-on of an authentication button provided
on said particular one of said portable radio devices.

16. (Canceled)

17. (Currently Amended) An authenticating method for mobile radio devices,
comprising the steps of:

providing a plurality of mobile radio devices, each of said plurality of mobile
radio devices comprising data communicating means for performing radio communication and
authenticating means for performing authentication of said mobile radio devices; and

performing mutual authentication between two or more mobile radio devices by
said authenticating means automatically or after initiation by users of said two or more mobile
radio devices when the two or more mobile radio devices come sufficiently closer to each other
that coverage areas of radio waves generated by the two or more mobile radio devices overlap;

preventing communication with an unintentional mobile radio device by
narrowing the coverage area of both the two or more mobile radio devices to be mutually
authenticated before authentication initiates based on the proximity of the two or more mobile
radio devices; and

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specifying other devices to be mutually authenticated when the two or more
mobile radio devices are within a predetermined range of each other over said second coverage
area.